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Sir:

Transmitted herewith for filing is the Patent Application of:

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For: LINKING A USER SELECTED SEQUENCE OF RECEIVED WORLD WIDE WEB DOCUMENTS INTO A STORED DOCUMENT STRING AVAILABLE TO THE USER AT RECEIVING WEB STATION

Enclosed are:

☒ Patent Specification and Declaration☒ 8 sheets of drawing(s)☒ An assignment of the invention to International Business Machines Corporation (includes Recordation Form Cover Sheet)☐ A certified copy of a ☐ application.☒ Statement in Lieu of Information Disclosure Statement.

The filing fee has been calculated as shown below:

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LINKING A USER SELECTED SEQUENCE OF RECEIVED WORLD
WIDE WEB DOCUMENTS INTO A STORED DOCUMENT STRING
AVAILABLE TO THE USER AT A RECEIVING WEB STATION

Technical Field

5 The present invention relates to computer managed
communication networks such as the World Wide Web (Web)
and, particularly, to systems, processes and programs for
reducing users' time spent in accessing and browsing
through numerous Web documents which may be of possible
10 interest to the user.

Background of Related Art

 The past decade has been marked by a technological
revolution driven by the convergence of the data
processing industry with the consumer electronics
15 industry. The effect has, in turn, driven technologies
which have been known and available but relatively
quiescent over the years. A major one of these
technologies is the Internet or Web related distribution
of documents, media and programs. The convergence of the
20 electronic entertainment and consumer industries with
data processing exponentially accelerated the demand for
wide ranging communication distribution channels, and the
Web or Internet, which had quietly existed for over a
generation as a loose academic and government data
25 distribution facility, reached "critical mass" and
commenced a period of phenomenal expansion. With this
expansion, businesses and consumers have direct access to
all matter of documents, media and computer programs.

 In addition, Hypertext Markup Language (HTML), which
30 had been the documentation language of the Internet or
Web for years, offered direct hyperlinks between Web

pages embedded in such Web pages. This even further exploded the use of the Internet or Web. It was now possible for the Web browser or wanderer to spend literally hours going through document after document in often less than productive excursions through the Web. These excursions often strained the users' time and resources. A significant source of this drain is in the Web page itself (the basic document page of the Web).

Web documents or pages have hyperlinks setting forth terms and topics which the user may interactively click on or select to access other Web documents which, in turn, respectively have their own hyperlinks selectable by the user to access the next Web documents. Thus, browsing through Web documents often involves the time consuming process of following a thread of hyperlinked Web documents through several levels of hyperlinks, then backing up to a Web document at an earlier level, selecting another hyperlink in that document and then following another thread of hyperlinked documents through several levels.

Web developers and users are continually seeking implementations to make this Web document browsing process less cumbersome and more user friendly. At present, there are many effective browsing routines by which the user may backtrack through where he has been and passed through in his navigation in the Web in a particular session. While these approaches certainly do help the user in relocating Web pages and documents of interest and particular hyperlinks on these pages of interest, they still require that the user spend considerable time going through documents in the backtracked sequence which are of little no interest. It should also be considered that the organization of Web

pages and their hyperlinks are based upon what is of universal or global user interest. On the other hand, the particular user's interests may be quite specific and not follow any universal logic.

5 Summary of the Present Invention

The present invention addresses the browsing user's particular needs in browsing through the Web by enabling the user to link a selected sequence of hypertext Web documents into a string and to store the string at his
10 receiving Web display station so that these documents will be available for his use.

In its broadest aspects, the invention involves the combination of means at a receiving display station for designating a received Web document as a starter
15 document, and means for selecting a subsequently received Web document as a first next document. Means are provided for creating a hyperlink in said starter document to said first next document, together with means for storing said starter and next documents at said
20 receiving display station.

The invention further provides for an extension of the selected documents into a string through means for selecting one or more subsequently received Web documents as a subsequent next documents and means for creating a
25 hyperlink in said first next document to the subsequent next document. The subsequent next documents are also stored at the receiving display station to thereby store a selected string of linked Web documents. Preferably, each hyperlink to a next document is visually distinct
30 from other hyperlinks in its document, e.g. the hyperlink may be highlighted.

The invention also provides means for changing the order of the sequence of next documents in said string.

The present invention may be conveniently implemented in the browser serving the receiving display station which includes the above-mentioned means for
5 designating a received Web document as a starter document; the means for selecting a subsequently received Web document as a first next document; the means for creating a hyperlink in said starter document to said
10 first next document; the means for selecting at least one subsequently received Web document as a subsequent next document; and the means for creating a hyperlink in said first next document to said subsequent next document.

The starter and next documents, and said subsequent
15 next documents, are most conveniently stored in permanent storage rather than a temporary cache associated with the Web browser at said receiving display station.

Brief Description of the Drawings

The present invention will be better understood and
20 its numerous objects and advantages will become more apparent to those skilled in the art by reference to the following drawings, in conjunction with the accompanying specification, in which:

Fig. 1 is a block diagram of a data processing
25 system including a central processing unit and network connections via a communications adapter which is capable of implementing the receiving display station on which the Web documents are selectively strung together through created additional hyperlinks in accordance with the
30 present invention;

Fig. 2 is a generalized diagrammatic view of a Web portion upon which the present invention may be implemented;

Fig. 3 is a diagrammatic view of a Web page and a
5 selected subsequent page displayed at a receiving display station showing the original hyperlinks in each page;

Fig. 4 is the diagrammatic view of Fig. 3 illustrating how the two pages of Fig. 3 may be selectively strung together into respective starter and
10 first next Web documents;

Fig. 5 is a diagrammatic view illustrative of a selected string of three Web documents;

Fig. 6 is a diagrammatic view showing how the order of the three documents in the string of Fig. 5 may be
15 changed;

Fig. 7 is an illustrative flowchart describing the setting up of the process of the present invention for dynamically creating a selected string of hyperlinked received Web documents; and

20 Fig. 8 is a flowchart of an illustrative run of the process set up in Fig. 7.

Detailed Description of the Preferred Embodiment

Referring to Fig. 1, a typical data processing terminal is shown which may function as the Web display
25 stations used for receiving Web pages, for Web browsing and for creating a string of selected received Web documents.

A central processing unit (CPU) 10, such as one of the PC microprocessors or workstations, e.g. RISC
30 System/6000™ (RS/6000) series available from International Business Machines Corporation (IBM), is provided and interconnected to various other components

by system bus 12. An operating system 41 runs on CPU 10, provides control and is used to coordinate the function of the various components of Fig. 1. Operating system 41 may be one of the commercially available operating systems such as the AIX 6000™ operating system available from IBM; Microsoft's Windows98™ or WindowsNT™, as well as UNIX and AIX operating systems. Application programs 40, controlled by the system, are moved into and out of the main memory Random Access Memory (RAM) 14. These programs include the programs of the present invention for creating a string of selected received Web documents to be subsequently described in combination with any conventional Web browser, such as the Netscape Navigator 3.0™ or Microsoft's Internet Explorer™. A Read Only Memory (ROM) 16 is connected to CPU 10 via bus 12 and includes the Basic Input/Output System (BIOS) that controls the basic computer functions. RAM 14, I/O adapter 18 and communications adapter 34 are also interconnected to system bus 12. I/O adapter 18 may be a Small Computer System Interface (SCSI) adapter that communicates with the disk storage device 20. Communications adapter 34 interconnects bus 12 with an outside network enabling the data processing system to communicate with other such systems over a Local Area Network (LAN) or a Wide Area Network (WAN), which includes, of course, the Web or Internet. Web and Internet are meant to be generally interchangeable terms and are so used in the present description of the distribution network. I/O devices are also connected to system bus 12 via user interface adapter 22 and display adapter 36. Keyboard 24 and mouse 26 are all interconnected to bus 12 through user interface adapter 22. It is through such input devices that the user may

interactively relate to Web pages. Display adapter 36 includes a frame buffer 39, which is a storage device that holds a representation of each pixel on the display screen 38. Images may be stored in frame buffer 39 for display on monitor 38 through various components; such as a digital to analog converter (not shown) and the like. By using the aforementioned I/O devices, a user is capable of inputting information to the system through the keyboard 24 or mouse 26 and receiving output information from the system via display 38.

Before going further into the details of specific embodiments, it will be helpful to understand from a more general perspective the various elements and methods which may be related to the present invention. Since the major aspect of the present invention is directed to Web pages transmitted over global networks, such as the Web or Internet, an understanding of networks and their operating principles would be helpful. We will not go into great detail in describing the networks to which the present invention is applicable. For details on Web nodes, objects and links, reference is made to the text, Mastering the Internet, G. H. Cady et al., published by Sybex Inc., Alameda, CA, 1996; or the text, Internet: The Complete Reference, Millennium Edition, Margaret Young et al., Osborne/McGraw-Hill, Berkeley, CA, 1999. Any data communication system which interconnects or links computer controlled systems with various sites defines a communications network. Of course, the Internet or Web is a global network of a heterogeneous mix of computer technologies and operating systems. Higher level objects are linked to the lower level objects in the hierarchy through a variety of network server computers.

Web documents are conventionally implemented in HTML language, which is described in detail in the text entitled Just Java, van der Linden, 1997, SunSoft Press, particularly at Chapter 7, pp. 249-268, dealing with the
5 handling of Web pages; and also in the above-referenced Mastering the Internet, particularly pp. 637-642, on HTML in the formation of Web pages.

In addition, aspects of this invention will involve Web browsers. A general and comprehensive description of
10 browsers may be found in the above-mentioned Mastering the Internet text at pp. 291-313. More detailed browser descriptions may be found in the above-mentioned Internet: The Complete Reference, Millennium Edition text at Chapter 19, pp. 419-454, on the Netscape
15 Navigator; Chapter 20, pp. 455-494, on the Microsoft Internet Explorer; and Chapter 21, pp. 495-512, covering Lynx, Opera and other browsers.

A generalized diagram of a portion of the Web, to which the computer controlled display terminal 57 used
20 for Web page receiving during searching or browsing, is connected as shown in Fig. 2. Computer display terminal 57 may be implemented by the computer system set up in Fig. 1 and connection 58 (Fig. 2) is the network connection shown in Fig. 1. For purposes of the present
25 embodiment, computer 57 serves as a Web display station and has received displayed Web page 56, which is one of a sequence of Web pages containing an embedded hyperlink to other Web pages.

Reference may be made to the above-mentioned
30 Mastering the Internet, pp. 136-147, for typical connections between local display stations to the Web via network servers, any of which may be used to implement the system on which this invention is used. The system

embodiment of Fig. 2 has a host-dial connection. Such host-dial connections have been in use for over 30 years through network access servers 53 which are linked 61 to the Web 50. The servers 53 may be maintained by a
5 service provider to the client's display terminal 57. The host's server 53 is accessed by the client terminal 57 through a normal dial-up telephone linkage 58 via modem 54, telephone line 55 and modem 52. The HTML file representative of the Web page 56 has been downloaded to
10 display terminal 57 through Web access server 53 via the telephone line linkages from server 53, which may have accessed them from the Internet 50 via linkage 61. The Web browser program 59 operates within the display terminals 57 to control the communication with the Web
15 access server 53 to thereby download and display the accessed Web pages 56 on terminal 57. The Web access server 53 uses any search engines to access via the Web 50 and obtain Web documents from appropriate Web resources such as databases 60, 62 and 63.

20 With this setup, the present invention, which will be subsequently described in greater detail with respect to Figs. 3 through 6, may be carried out using Web browser 59 and associated permanent storage facility 51 (Fig. 2) to form and store a string of user selected Web
25 documents including starter document 47, first next document 49 and next subsequent document 48.

It should be stressed that the string should be stored in a permanent storage facility such as the disk drive storage of the receiving display station rather
30 than the browser cache which is temporary storage. The storage of the selected string of Web documents in permanent storage provides the user with a set of Web documents in their original form. This is in contrast to

other forms of Web document saving, such as bookmarking, which may provide the Web documents in changed or upgraded form when needed or the whole Web document may become no longer available. With current Web technology,
5 documents are frequently changed on an hourly basis or even minute to minute. An advantage of the present invention is that the received and stored documents in the string are preserved in their original form.

Fig. 3 is an illustration of two displayed Web
10 documents which the user decides to selectively put into the document string. Standard Web document 70, which the user has received over the Web at a receiving display station, contains text as well as standard hyperlinks 71 to other Web documents. When the user selects one of the
15 hyperlinks by clicking on it, the browser program accesses the linked document from the Web through the document's URL and displays the accessed Web document. Thus, the user, with the aid of his browser, navigates through the Internet through the standard hyperlinks in
20 received Web documents.

Now, in accordance with the present invention, when the user obtains a Web document in which he has a particular interest, he may wish to start a string of Web documents of his particular interests. The browser menu
25 bar is modified to include the selectable item 65 [**START STRING**]. The selected document will be downloaded and stored in cache 51, Fig. 2. As the user continues to browse, the menu bar in subsequently received Web documents will now include item 66 [**STRING/NEXT**], as in
30 document 72, which has standard hyperlinks 73. There can only be one starter document in a string. Thus, once a starter document is selected, all subsequently selected documents are next documents in the string.

Now assuming that document 72 is selected as the first next document in the string as shown in Fig. 4, then a special string hyperlink 74 will appear in starter document 70 to indicate a hyperlink to the first next
5 document; in the present example, Web document 72. The string hyperlink 74 should be visually distinct from the other standard hyperlinks 71 so that it will stand out. It may be highlighted. Dashed line 75 diagrammatically shows the hyperlink from link 74 in starter Web document
10 70 to first next document 72 in the string. Document 72 is also stored in storage 51.

Fig. 5 illustrates a string of selected Web documents formed as described above. In addition to Web documents 70 and 72, the string includes subsequent next
15 document 77 which is strung through hyperlink 76 in first next document 72 via diagrammatic string 79. Document 77 includes a string hyperlink 78 which is shown connected via string hyperlink 78 via path 69 to the next subsequent documents in the string. Path 69 is shown as
20 broken to indicate and include any reasonable number of selected Web documents linked as described above.

The invention includes the capability of changing the order of the Web documents in the string. In doing so, for example, the string of documents shown in Fig. 5
25 may be displayed as shown in Fig. 5. Then, Fig. 6, the user may interactively move the documents to change the order through mouse controlled cursors 82 and 83 which respectively move documents 72 and 77 through the paths 81 and 80 to change the order. Once the user interactive
30 move is completed, the system will note the change in string Web documents' order and reorder the hyperlinks from links 76 and 78 to reflect the change.

It should also be noted that once a string of Web documents has been stored at a Web receiving location, such as in storage 51 associated with receiving Web station 57, that station may be provided as a Web page
5 source or resource for distributing the created string to other stations on the Web.

Fig. 7 is a flowchart showing the development of a process according to the present invention for selectively linking and storing a string of received Web
10 documents. Most of the programming functions in the process of Fig. 7 have already been described in general with respect to Figs. 3 through 6. A Web browser is provided at a receiving display station on the Web for accessing Web pages in the conventional manner and
15 loading them at the display station, step 84. The browser has the capability of designating a received Web document as a starter document in a string. The browser also has the capability of designating a subsequently received Web document as the first next document, step
20 85. The browser is provided with the capability of creating a hyperlink in the starter document to the first next document, which link is visually distinct from the standard hyperlinks in the starter, step 86. The browser is provided with the further capability of selecting one
25 or more subsequently received Web documents as subsequent next documents, step 87. The browser is also provided with the capability of creating a hyperlink in the first next document to the following subsequent next document and hyperlinks in each of the plurality of subsequent
30 next documents to their following subsequent next documents in the string, step 88. Storage is provided for storing the document string, step 89. Also, the

browser is provided with the capability of changing the order of the documents in the string, step 90.

The running of the process setup in Fig. 7 and described in connection with Figs. 3 through 6 will now
5 be described with respect to the flowchart of Fig. 8. Let us assume that we are in a Web browsing session through the browser. The flowchart represents some steps in a routine which will illustrate the operation of the invention. The browser accesses the Web documents.
10 First, a determination is made as to whether a Web document is received, step 91. If No, the process is returned to step 91 and a Web document is awaited. If Yes, a Web document is received, the document is displayed, step 92. Then, a determination is made as to
15 whether the document has been selected as a starter document for a string, step 93. If No, then the process is returned to step 91 and the next Web document is awaited. If the decision from step 93 is Yes, then the document is stored as a string starter document, step 94.
20 Then, a determination is made, step 95, as to whether a Web document is received. If No, then the process is returned to step 95 and the next Web document is awaited. If Yes, a Web document is received, the document is displayed, step 96. Then a determination is made as to
25 whether the document has been selected as a next document for the string, step 97. If No, then the process is returned to step 91 and the next Web document is awaited. If the decision from step 97 is Yes, then the document is stored as the first next document and a hyperlink to it
30 is created in the starter document, step 98.

Then, a determination is made, step 99, as to whether a Web document is received. If No, then the process is returned to step 99 and the next Web document

is awaited. If Yes, a Web document is received, the document is displayed, step 100. Then a determination is made as to whether the document has been selected as a next document for the string, step 101. If No, then the process is returned to step 99 and the next Web document is awaited. If the decision from step 101 is Yes, then the document is stored as a next document and a hyperlink to it is created in the previous document, step 102. Then, step 103, all of the linked documents in the string are stored in the receiving station storage. At this time, a determination may be conveniently made as to whether the session is to be ended. If Yes, the session is exited. If No, then after each next received document the process is returned via branch "A" to step 99 where the next received Web document is awaited.

One of the preferred implementations of the present invention is in application program 40, i.e. a browser program made up of programming steps or instructions resident in RAM 14, Fig. 1, of a Web receiving station during various Web operations. Until required by the computer system, the program instructions may be stored in another readable medium, e.g. in disk drive 20 or in a removable memory, such as an optical disk for use in a CD ROM computer input or in a floppy disk for use in a floppy disk drive computer input. Further, the program instructions may be stored in the memory of another computer prior to use in the system of the present invention and transmitted over a LAN or a WAN, such as the Web itself, when required by the user of the present invention. One skilled in the art should appreciate that the processes controlling the present invention are capable of being distributed in the form of computer readable media of a variety of forms.

Although certain preferred embodiments have been shown and described, it will be understood that many changes and modifications may be made therein without departing from the scope and intent of the appended
5 claims.

ClaimsWhat is claimed is:

1 1. In a World Wide Web (Web) communication network with
2 user access via a plurality of data processor controlled
3 interactive receiving display stations for displaying
4 received hypertext documents of at least one display page
5 containing embedded hyperlinks to other hypertext
6 documents accessible from sources on the Web, a system
7 enabling a user to link and store a sequence of selected
8 hypertext documents comprising:
9 means at a receiving display station for designating
10 a received Web document as a starter document;
11 means for selecting a subsequently received Web
12 document as a first next document;
13 means for creating a hyperlink in said starter
14 document to said first next document; and
15 means for storing said starter and next documents at
16 said receiving display station.

1 2. The network system of claim 1 further including:
2 means for selecting at least one subsequently
3 received Web document as a subsequent next document;
4 means for creating a hyperlink in said first next
5 document to said subsequent next document; and
6 means for also storing said subsequent next document
7 at said receiving display station to thereby store a
8 selected string of linked Web documents.

1 3. The network system of claim 2 wherein:

2 said means for selecting a subsequent next document
3 is enabled to select a plurality of said subsequent next
4 documents; and

5 further including means for creating in each
6 subsequent next document a hyperlink to the following
7 subsequent next document in said string.

1 4. The network system of claim 2 wherein said hyperlink
2 to a next document is visually distinct from other
3 hyperlinks in each document.

1 5. The network system of claim 4 wherein said hyperlink
2 to a next document is highlighted.

1 6. The network system of claim 3 further including means
2 for changing the order of the sequence of next documents
3 in said string.

1 7. The network system of claim 2 wherein said receiving
2 display station further includes a user interactive Web
3 browser, said Web browser including:

4 said means for designating a received Web document
5 as a starter document;

6 said means for selecting a subsequently received Web
7 document as a first next document;

8 said means for creating a hyperlink in said starter
9 document to said first next document;

10 said means for selecting at least one subsequently
11 received Web document as a subsequent next document; and

12 said means for creating a hyperlink in said first
13 next document to said subsequent next document.

1 8. In a Web communication network with user access via a
2 plurality of data processor controlled interactive
3 receiving display stations for displaying received
4 hypertext documents of at least one display page
5 containing embedded hyperlinks to other hypertext
6 documents accessible from sources on the Web, a method
7 for enabling a user to link and store a sequence of
8 selected hypertext documents comprising:
9 designating a received Web document at a receiving
10 display station as a starter document;
11 selecting a subsequently received Web document as a
12 first next document;
13 creating a hyperlink in said starter document to
14 said first next document; and
15 storing said starter and next documents at said
16 receiving display station.

1 9. The method of claim 8 further including:
2 the step of selecting at least one subsequently
3 received Web document as a subsequent next document;
4 creating a hyperlink in said first next document to
5 said subsequent next document; and
6 also storing said subsequent next document at said
7 receiving display station to thereby store a selected
8 string of linked Web documents.

1 10. The method of claim 9 wherein:
2 a plurality of subsequent next documents are
3 selected; and
4 further including the step of creating in each
5 subsequent next document a hyperlink to the following
6 subsequent next document in said string.

1 11. The method of claim 9 wherein said hyperlink to a
2 next document is visually distinct from other hyperlinks
3 in each document.

1 12. The method of claim 11 wherein said hyperlink to a
2 next document is highlighted.

1 13. The method of claim 10 further including the step of
2 changing the order of the sequence of next documents in
3 said string.

1 14. The method of claim 9 further including a Web
2 browser method operatively associated with said receiving
3 display station, said Web browser including said steps
4 of:

5 designating a received Web document at a receiving
6 display station as a starter document;

7 selecting a subsequently received Web document as a
8 first next document;

9 creating a hyperlink in said starter document to
10 said first next document;

11 selecting at least one subsequently received Web
12 document as a subsequent next document; and

13 creating a hyperlink in said first next document to
14 said subsequent next document.

1 15. A computer program having code recorded on a
2 computer readable medium for enabling a user to link and
3 store a sequence of selected hypertext documents in a Web
4 communication network with user access via a plurality of
5 data processor controlled interactive receiving display
6 stations for displaying received hypertext documents of
7 at least one display page containing embedded hyperlinks
8 to other hypertext documents accessible from sources on
9 the Web, said program comprising:

10 means at a receiving display station for designating
11 a received Web document as a starter document;

12 means for selecting a subsequently received Web
13 document as a first next document;

14 means for creating a hyperlink in said starter
15 document to said first next document; and

16 means for storing said starter and next documents at
17 said receiving display station.

1 16. The computer program of claim 15 further including:

2 means for selecting at least one subsequently
3 received Web document as a subsequent next document;

4 means for creating a hyperlink in said first next
5 document to said subsequent next document; and

6 means for also storing said subsequent next document
7 at said receiving display station to thereby store a
8 selected string of linked Web documents.

1 17. The computer program of claim 16 wherein:
2 said means for selecting a subsequent next document
3 are enabled to select a plurality of said subsequent next
4 documents; and
5 further including means for creating in each
6 subsequent next document a hyperlink to the following
7 subsequent next document in said string.

1 18. The computer program of claim 16 wherein said
2 hyperlink to a next document is visually distinct from
3 other hyperlinks in each document.

1 19. The computer program of claim 18 wherein said
2 hyperlink to a next document is highlighted.

1 20. The computer program of claim 17 further including
2 means for changing the order of the sequence of next
3 documents in said string.

1 21. The computer program of claim 16 wherein said
2 receiving display station further includes a user
3 interactive Web browser, said Web browser including:
4 said means for designating a received Web document
5 as a starter document;
6 said means for selecting a subsequently received Web
7 document as a first next document;
8 said means for creating a hyperlink in said starter
9 document to said first next document;
10 said means for selecting at least one subsequently
11 received Web document as a subsequent next document; and
12 said means for creating a hyperlink in said first
13 next document to said subsequent next document.

LINKING A USER SELECTED SEQUENCE OF RECEIVED WORLD
WIDE WEB DOCUMENTS INTO A STORED DOCUMENT STRING
AVAILABLE TO THE USER AT A RECEIVING WEB STATION

Abstract

5 Enabling the user to link a selected sequence of
hypertext World Wide Web (Web) documents into a string
and to store the string at his receiving Web display
station so that these documents will be available for his
use. An implementation at a receiving display station is
10 provided for designating a received Web document as a
starter document and for selecting a subsequently
received Web document as a first next document. An
implementation is provided for creating a hyperlink in
the starter document to the first next document, together
15 with means for storing said starter and next documents at
said receiving display station.

The invention further provides for an extension of
the selected documents into a string through selecting
one or more subsequently received Web documents as a
20 subsequent next document and creating a hyperlink in the
first next document to the subsequent next document. The
subsequent next documents are also stored at the
receiving display station to thereby store a selected
string of linked Web documents. Preferably, each
25 hyperlink to a next document is visually distinct from
other hyperlinks in its document, e.g. the hyperlink may
be highlighted.

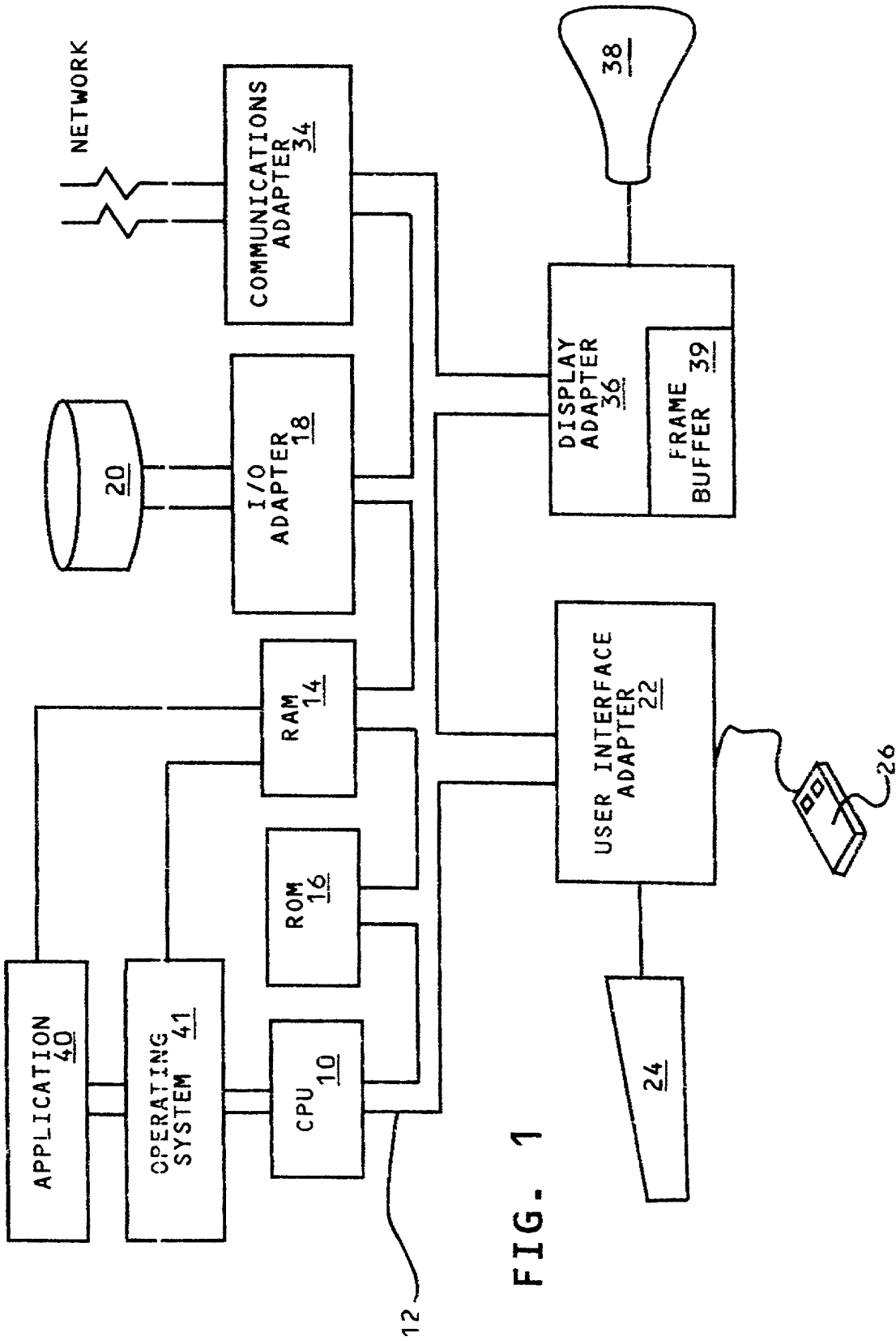
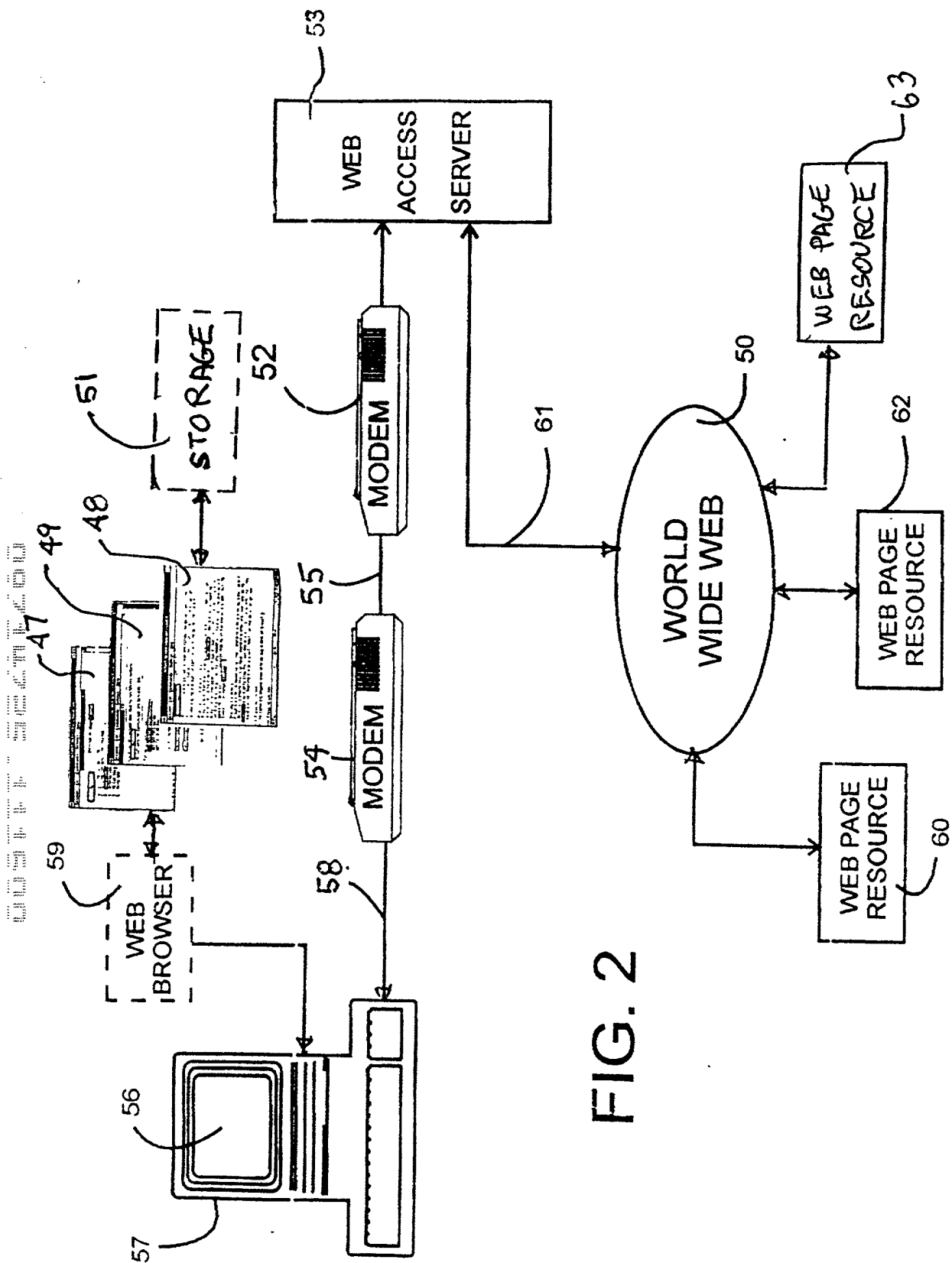


FIG. 1



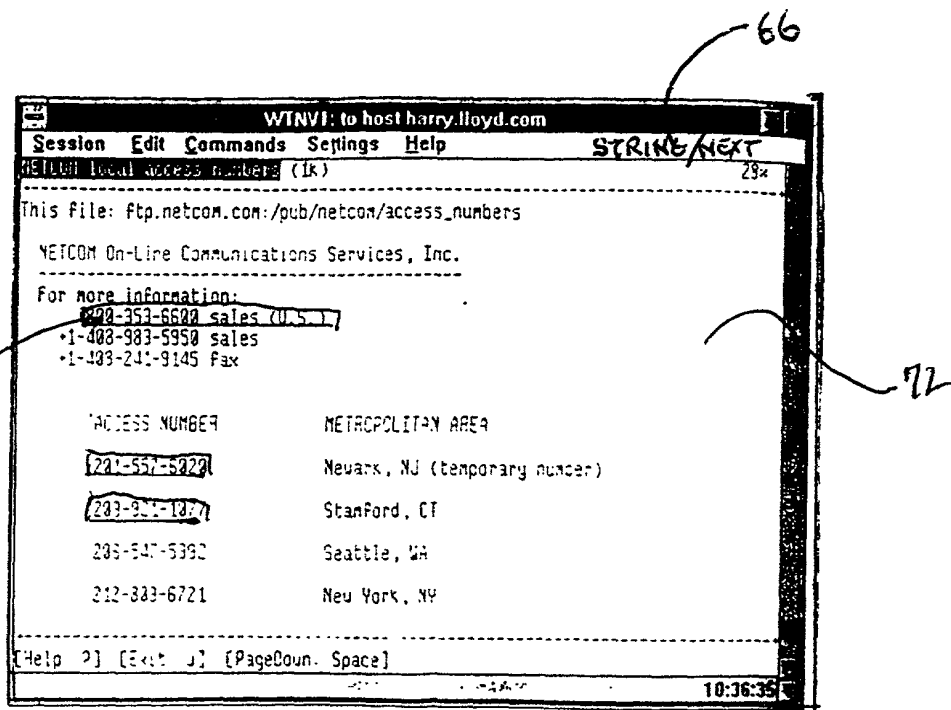
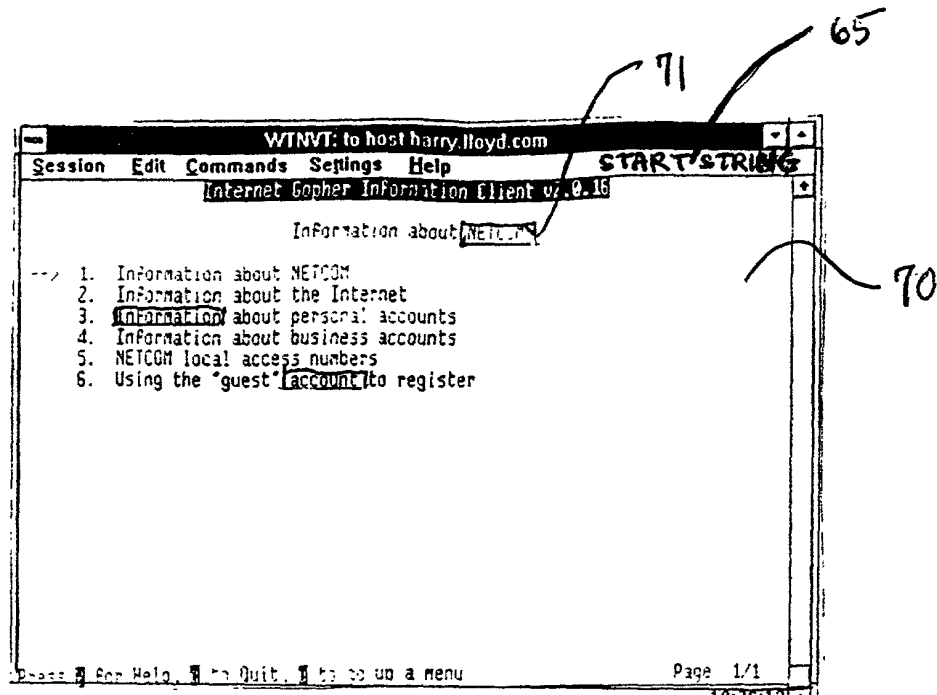


FIG. 3

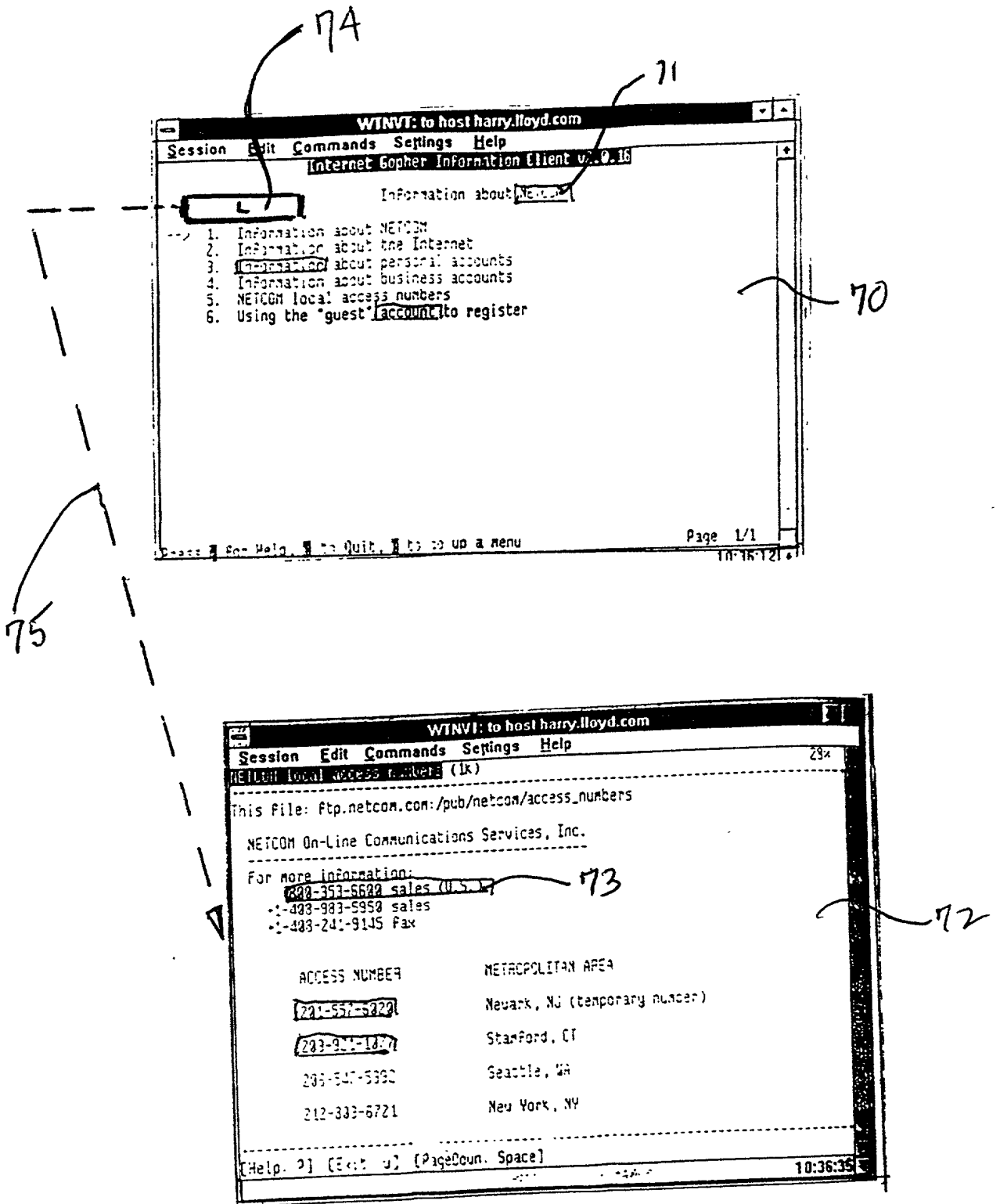
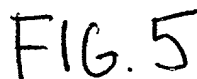


FIG. 4



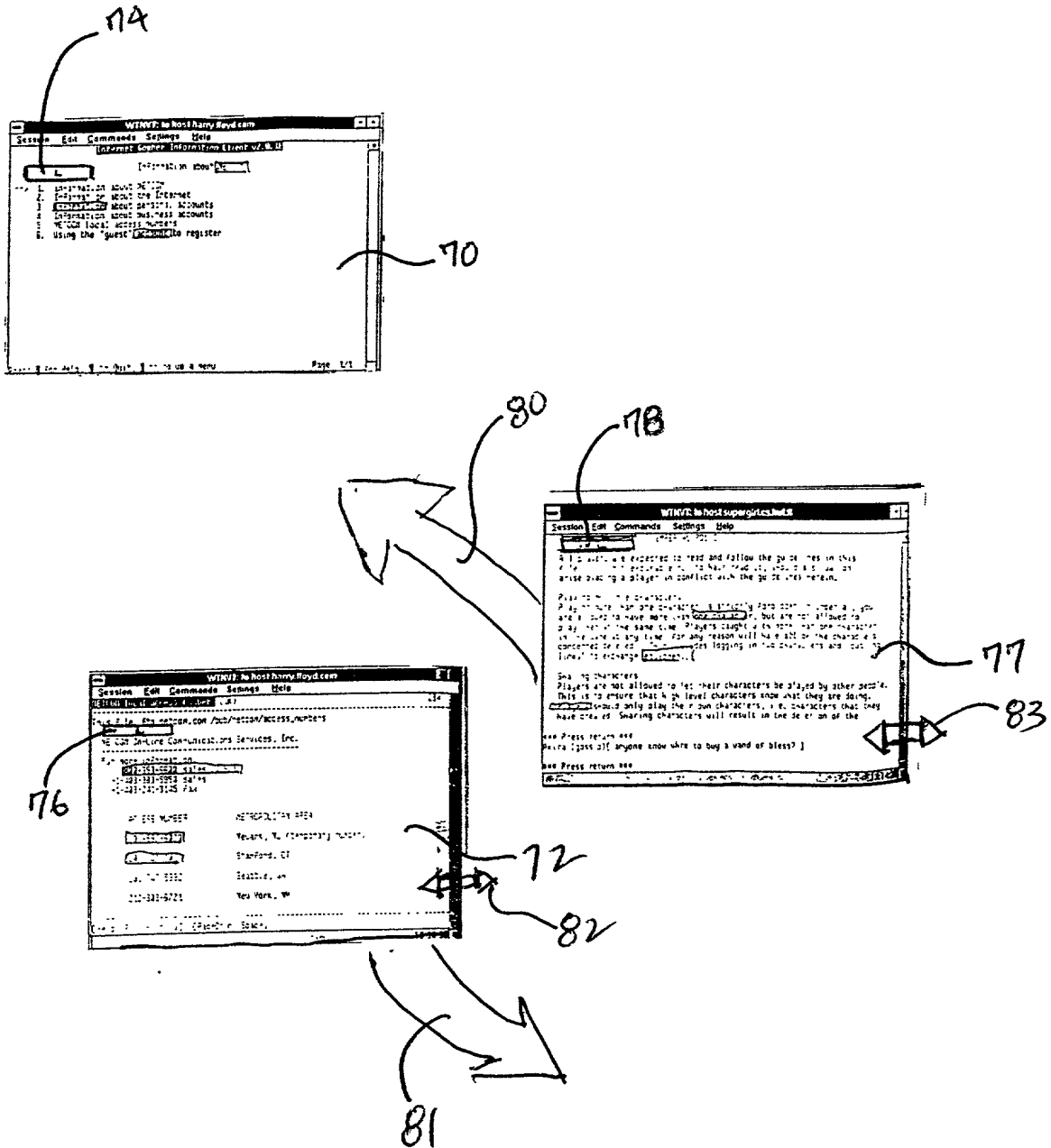
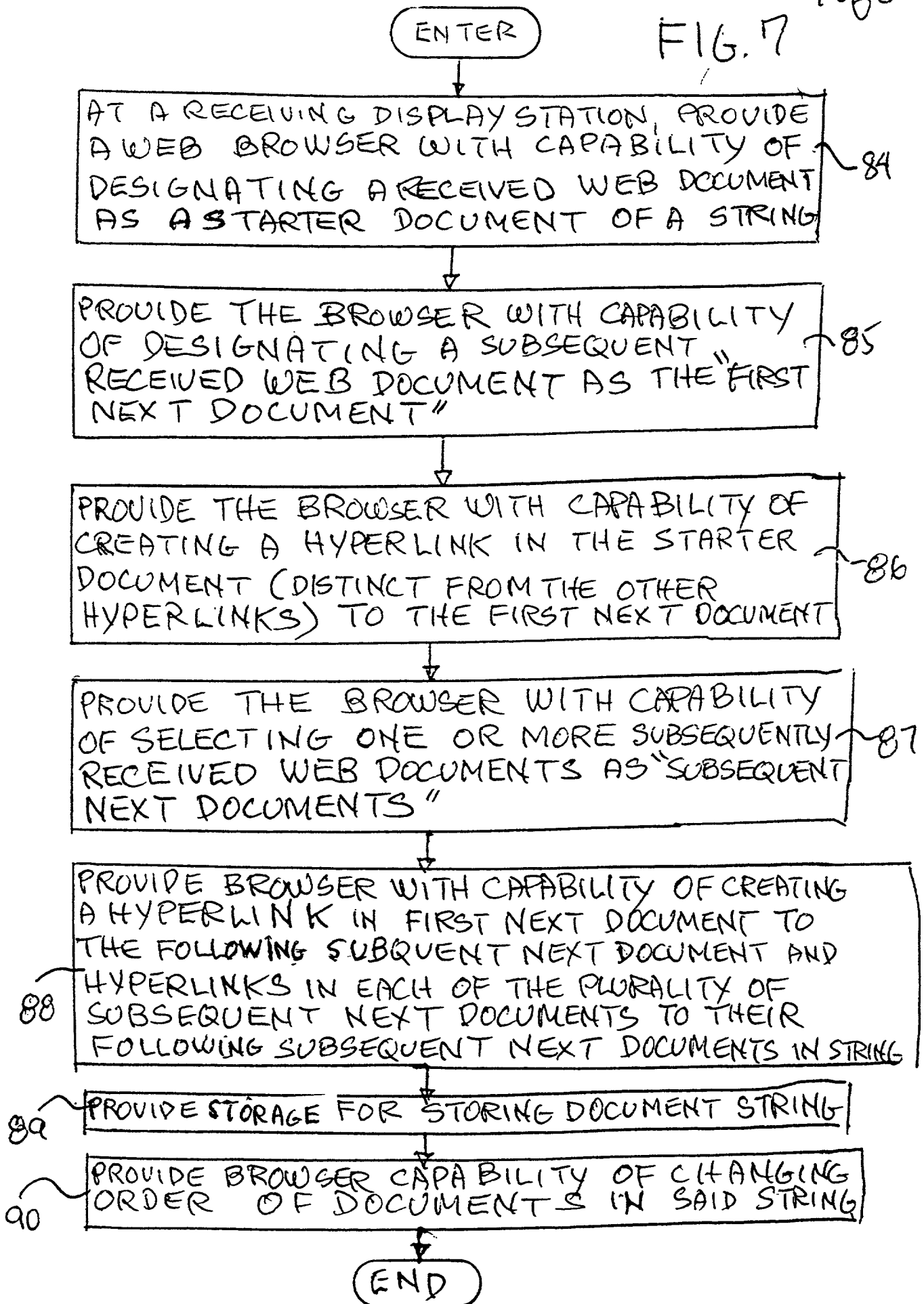
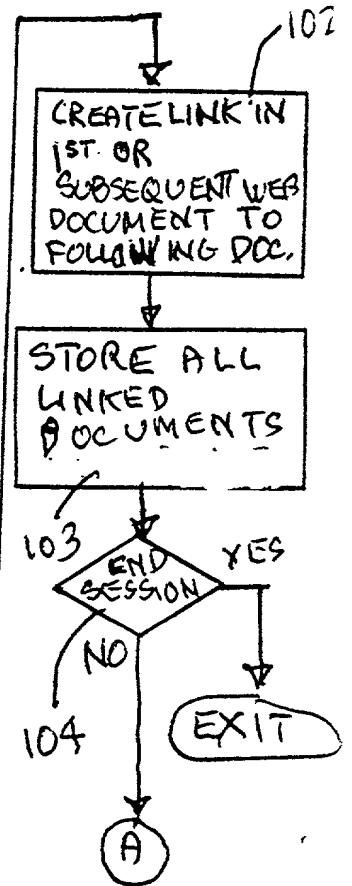
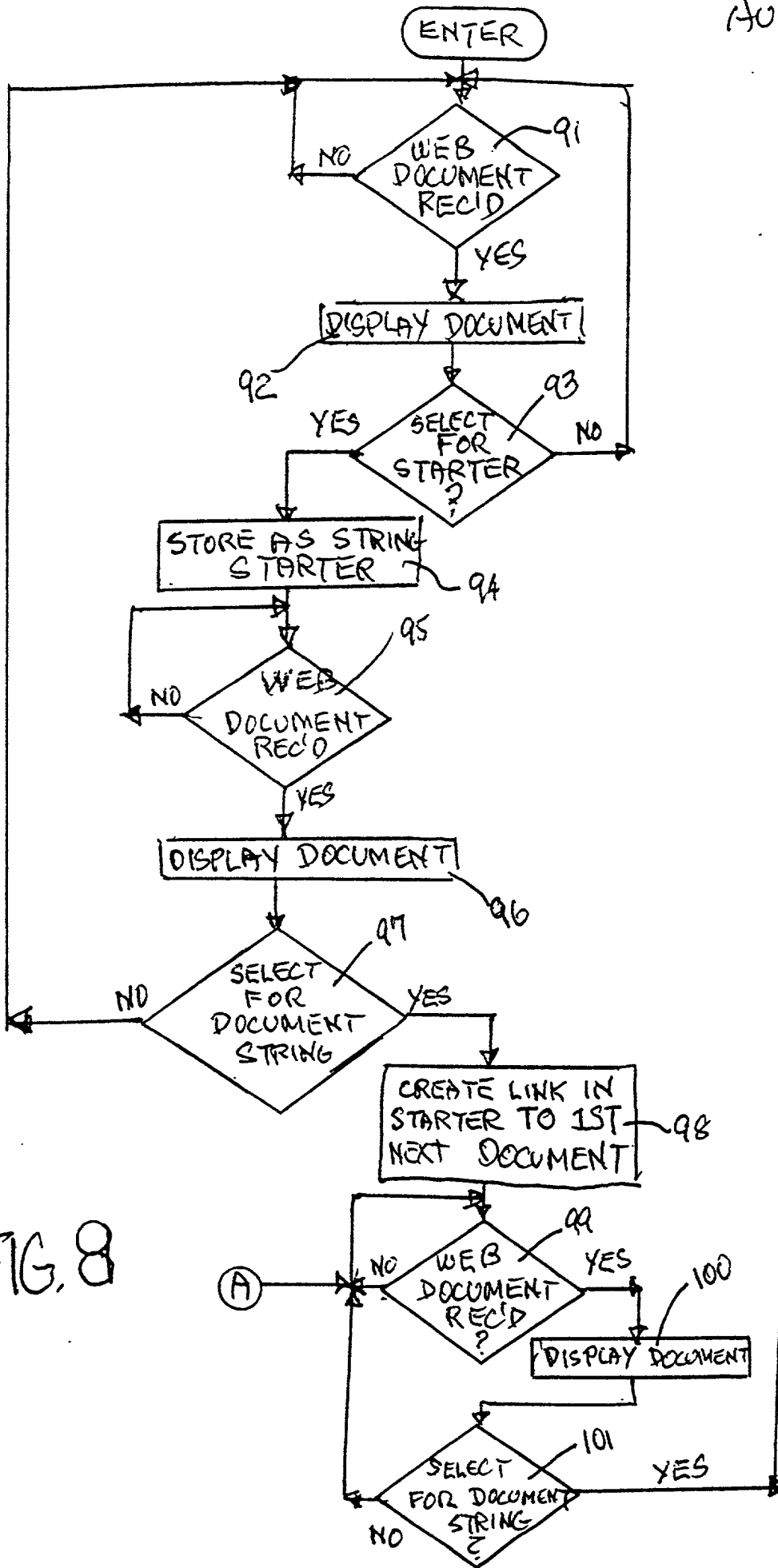


FIG. 6

FIG. 7





DOCKET NUMBER: AUS9-2000-0748-US1

**DECLARATION AND POWER OF ATTORNEY FOR
PATENT APPLICATION**

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name;

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

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the specification of which (check one)

X is attached hereto.

— was filed on _____
as Application Serial No. _____
and was amended on _____
(if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the patentability of this application in accordance with Title 37, Code of Federal Regulations, §1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s):

Priority Claimed

(Number)

(Country)

(Day/Month/Year)

___ Yes ___ No

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United

States Code, §112, I acknowledge the duty to disclose information material to the patentability of this application as defined in Title 37, Code of Federal Regulations, §1.56 which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

(Application Serial #)	(Filing Date)	(Status)
------------------------	---------------	----------

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorneys and/or agents to prosecute this application and transact all business in the Patent and Trademark Office connected therewith.

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FULL NAME OF SOLE OR FIRST INVENTOR: Gerald Francis McBrearty

INVENTORS SIGNATURE:  DATE: 11-15-2000

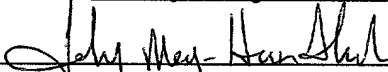
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